



Melrose Fire District Existing Building Assessment

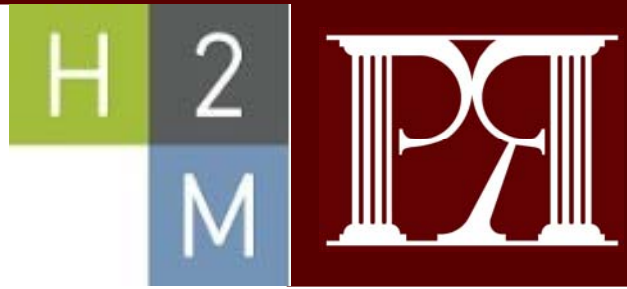
January 24, 2017





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Over View



PACHECO ROSS ARCHITECTS

A DIVISION OF H2M ARCHITECTS + ENGINEERS

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Melrose Fire District Existing Building Assessment

January 24, 2017

Pacheco Ross Architects, P.C. (PRA) performed a visual assessment on 09/21/2016 of the existing fire station building and site. We evaluated the following areas of concern. The summaries below are some of the major issues found during the assessments. Each assessment can be found in the Appendix. There are two portions of the building referred to in this report, the original 1953 structure and the newer 1970 addition that currently houses the bays and other functions.

- Site – parking, drainage, access, aprons and appurtenances
- Building envelope –roofs, walls, doors and windows
- Interiors – materials, rooms and appurtenances
- Life Safety/Code/ADA
- Structural – structural systems and foundations
- Heating, Ventilating and Air conditioning (HVAC)
- Electrical
- Plumbing

Site Assessment

The 3.06-acre property includes the fire station, parking and drive apron in front (west) and an outdoor storage and training area to the north. The site can accommodate apparatus bay expansion on the north given the large parking area that could be utilized. The property behind the building to the east is sloped toward the building and surface drainage has caused deterioration along the bottom of the east bay wall. A north-south French drain has helped, but additional measures are needed to protect the bottom of the wall.

There are fuel fill port and vent pipes on the north and south sides of the building indicating several underground storage tanks. There is a detailed Phase I Environmental Site Assessment dated 03/05/1999 that details the condition of the site, its history, underground tanks and other site issues. We will not repeat these findings, but will mention repairs, improvements or renovations that should be addressed.

The condition of the septic system is unknown. The tank leads to the stream, but no outfall could be found. The septic should be designed and replaced with a County approved system. The storm drainage leading directly to the southern stream should have filtration before discharging into the stream.

Building Envelope

The peaked ribbed metal roof flat roof was installed directly over the original bitumen roofs. The roof should be better insulated for heat loss. Additionally, many of the roof details, such as fascia, vents, etc. need to be upgraded and repaired against further deterioration. Gutters would prevent roof drainage from splashing on the ground and wetting the east and west walls which is causing deterioration.

The bay envelope construction is single wythe concrete masonry units (CMU), need repointing and needs insulation to protect against heat loss. The non-bay construction is brick on CMU and is very badly deteriorated at the bottom of the west wall. This deterioration needs to be further studied to see if there is structural or foundation damage.

Most doors are in good condition. A pair of doors on the east elevation need to be replaced. Various repairs such as masonry repointing and sealant replacement are needed on all elevations. Windows on all elevations and are in generally good condition. Overhead doors and operators are in average condition. The building skin is not well insulated except for the windows.

Building Interior Evaluation

The apparatus bays are too small for their intended use and are generally in average to poor condition. The CMU pilasters along the south bay wall are separated from the wall. The floor shows significant settlement and cracking. Both these conditions point to poor fill under the bay slab. We suspect organic materials are present. As the organics decay, it creates voids under the slab that causes movement and settling, which causes cracking and differential settlement. There is no fume exhaust system which is cause for concern for respond heath. There is a lack of bay support spaces and equipment such as storage, work room, DeCon hose reels and SCBA. Gear lockers are exposed in the bay and open to exhaust. There are floor drains in the slab, but as the Phase I report shows, they run to an inaccessible tank.

The entire building should be insulated and protected against air and water infiltration.

Life Safety/Code/ADA Assessment

The biggest issue besides lack of space is the lack of code compliance such as exit signage, proper door hardware, trip hazards, steps at egress doors and other code issues. In addition, there are numerous ADA compliance issues that will need to be addressed as repair and renovation work is undertaken.

Structural and Foundations

The main structural system in the bays is structural steel supported on CMU pilasters. The pilasters in the bays need to be repaired. Much of the structural systems and foundations were not visible. Foundations at areas of wall deterioration need to be observed before recommendations can be made.

Mechanical, Electrical & Plumbing

Mechanical

The boiler is in serviceable condition and is 10 years old. The furnace should be replaced. Window AC units are acceptable since it may not be cost-effective to install central AC.

Plumbing fixtures need to be upgraded to ADA compliance. As fixtures are replaced or moved, the District should consider low-flow alternatives which will help with the septic system.

The two separate electrical services should be combined into a single service. Wiring, lights, outlets and devices should all be upgraded as work progresses.

Conclusions

The existing station should have repairs and renovation as budgets allow. It is the opinion of the District that a new station is not feasible due to total cost and the inability for the public to afford the bond payments needed for new construction.

The most pressing issue needing repair is the bay floor and structural pilasters in the bays. The floor is a trip hazard and will continue to deteriorate. The pilasters should be pinned back to the CMU wall before there is structural movement of the support beams resting on them. There are several methods to repair the floor. A permanent fix involved removal and replacement of all unsuitable soil and organics under the slab. The only way to do this is to remove the slab and replace it onto proper compacted base. There is an unknown factor of how much and how deep the unsuitable materials are. Imagine excavation of many feet of materials to try and reach virgin ground. The unknowns associated with this type of fix could present untenable budget problems.

There may be a different approach to the bay slab. In the Work/Repair Plan, Building Interiors, Item #5 we present an alternative approach. Rather than remove the slab and deal with unknown removals and replacement, we suggest the following idea than can be priced as a fixed number.

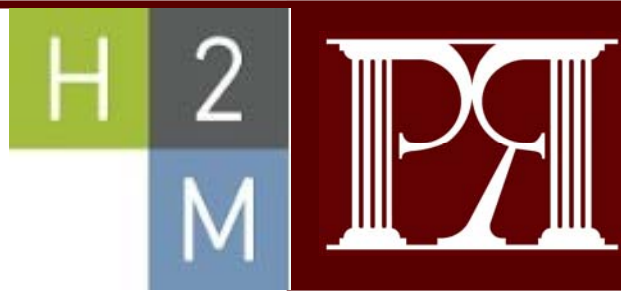
Add 2-3 new bays on the north side of the 1970 building. They should be properly sized for height and width, drainage, in-floor radiant heat, slab design, etc. They can have various roof configurations based on cost and aesthetics. These bays can be added while the existing bays are still in service. Move vehicles into the new bays when ready.

When the existing bays are empty, parge the existing floor or add several inches of lean concrete or flowable cover. Repair cracks with a structural crack healer. If thickness is added to the floor, then a ramp may be required to assess the non-bay portion of the building. The new bays should be at a height to match the existing floor so no ramps will be needed.

Then repurpose the abandoned bays for firematic support spaces such as a new M/F bathroom with shower, gear room, DeCon, SCBA, storage, etc. While the voids and decay under the slab will continue, the parging and crack healer should last several years because the extreme truck loads and vibration will cease. The pilasters should be structurally pinned to the CMU wall and braced by new walls that form these new rooms.

The east and west walls should have their foundations under the deteriorated portions of the wall investigated immediately. No meaningful recommendations can be made for repair or replacement until the condition of the foundations are known. The ground along the wall should be excavated and a structural engineer should assess the foundations. Destructive or other types of testing may be required.

All other repairs and/or renovations should follow these two major items. They can be approached on an as needed basis as budget allows.



Moving Forward



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Moving Forward

H2M architects + engineers (H2M), proposes the following new scope of services to assist the Melrose Fire District (District) choosing one of three (3) potential options for renovation, addition and/or new construction.

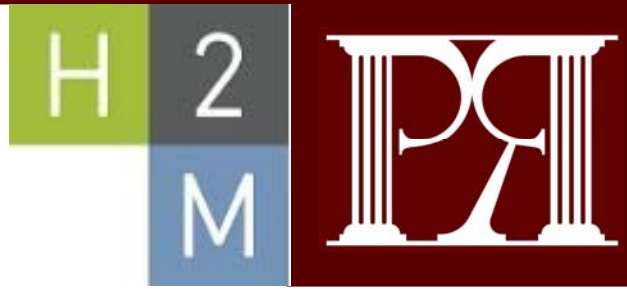
1. Building all new bays onto the north side of the existing bays. Demolish the entire south non-bay portion of the existing building and create offices, meeting, kitchen and other space within the existing bay space. This would include repair of the existing bay floor and structure where the building is settling.
2. Demolish the entire south non-bay portion of the existing building and create and build all new bays onto the south side of the existing bays. Create offices, meeting, kitchen and other space within the existing bay space. This would include repair of the existing bay floor and structure where the building is settling.
3. Demolish the entire existing building. Create a new building on the site. The location of a new structure will include research to determine if the existing can remain in service while a new building is built.

Proposed Services:

- o *Programming* - Create an operations-based Program of the spaces and site appurtenances needed for a new or renovated station
- o *Space Analysis* - Utilize the Programmed spaced, develop a Space Analysis of the probable sizes of each space and the building as a whole
- o *Size* – We assume the facility will be single story including 4 single-deep bays and non-bay space for an approximate total size of 7,000 -9,000 sq. ft.
- o *Site Information* - The District will need a site survey to include: metes and bounds, topography, creek and its wetland boundary, existing drainage and septic, well, underground tanks, the out building to the north and other major site features. H2M will assist the District in hiring a surveyor, we will prepare a survey checklist and manage the process.
- o *Site Plan* - Create a site plan and layout using the programmed building for each of the three (3) options. The site plan will include the building, proposed parking and drives, probable location of well and septic and other major site features.
- o *Floor Plan(s)* - Create conceptual, block diagram floor plans for each of the three (3) options
- o *Front Elevation* - Create a single front building elevation to illustrate massing, roof shape(s) and basic materials
- o *Budget* - Prepare a cost range based on square footage costs for the facility and assist the District in developing probable soft costs for the project
- o *Codes and Requirements* - Apply the requirements of the International Building Code 2015 (IBC), National Fire Protection Association (NFPA) and Americans with Disabilities Act (ADA)
- o *Additional Service* - If the District requires a more detailed hard cost for construction, we will engage a professional third-party estimator for a conceptual hard cost budget. We will present the fee, estimating consultant and scope of work to the District prior to moving forward
- o *Meetings* - H2M includes up to four (4) meetings which includes the Programming
- o *Geotechnical* - H2M will use the NY State Building Code requirement for fire stations as "essential services facilities" in our recommendations for the design and budget of the options
- o *Regulatory Requirements* - The District is a public entity and is subject to NYS Labor Department wage rate guidelines and bidding requirements of General Municipal Law Article 101-5A (Wicks Law) requiring a minimum of four (4) separate prime contractors for construction. Budgets will reflect these guidelines

CORPORATE HEADQUARTERS

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Work/Repair Plan



PACHECO ROSS ARCHITECTS

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Melrose Fire District Work/Repair Plan

January 24, 2017

Based on the Physical Building Assessments and Summary, Pacheco Ross Architects, P.C. (PRA) has prepared a plan of the work. We present it in the same order as the assessments below so that the work can be cross-referenced with the assessments.

- Site – parking, drainage, access, aprons and appurtenances
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Site

- Protect East bay wall from surface drainage – Create an earthen swale and berm to protect the east wall from surface drainage off the hill in the rear. Recreate the French drain in the swale.
- Clean and repair the base of the east wall.
- Follow the recommendations of the Phase I report to remove the underground tank connected to the bay drains. This should be replaced by an oil/water separator that flows into a storage tank that can be pumped out on a contractual basis. It should not go to the septic system as it could overwhelm the septic system.
- Remove existing septic tank and field. Install a new tank and field to accommodate higher usage.
- Mill paving and repave all asphalt. At ruts in front of bays: remove asphalt and 18” of base. Install new properly compacted base with a 5’ concrete apron across all bays.

Building Envelope

- **North elevation** – Repoint CMU as necessary (**typical entire building**)
- Remove eastern most door and frame, replace in its entirety.
- Sealants and caulk to be removed where deteriorated and replaced (**typical entire building**)
- **East elevation** – Clean base of building along all stained CMU and then repoint joints. Apply masonry sealer to entire unpainted walls.
- Dig several areas along the original and addition to inspect the foundation for deterioration.
- Install gutter with downspouts along the entire east roof eave on both buildings. Downspouts should have adequate surface drainage away from the building or discharge to underground pipes that lead to the French drain.
- Remove and replace wood vented soffit at both buildings. Replace with new aluminum vents at the bottom of the eave.

- Scrape and sand paint from original 1953 building. Reseal with protective coating that is compatible with remaining paint.
- Remove and replace single door and frame.
- Remove and replace windows in original 1953 building.
- Remove double doors to storage and permanently seal the opening.
- Sealants and caulk to be removed where deteriorated and replaced
- Repoint CMU as necessary
- **South elevation** – At the base of the 1970 building CMU wall with wood siding, there is separation of the wall from the foundation. The wood wall sits on open cell CMU foundations. The open cells allow water to fill the cells in the block and can cause freeze/thaw, deterioration, etc. Dig along several areas along the west portion of the wall to inspect the foundation for deterioration. After inspection of the foundation, we will make recommendations for repair at the base of the wall.
- Repoint CMU as necessary
- Sealants and caulk to be removed where deteriorated and replaced
- Seal junction of wall to asphalt paving at the 1953 building
- Create ADA accessible ramp at the South exit door in the 1953 building
- **West elevation** – Clean loose debris at base of the 1953 building along the bottom of the wall. Dig along the entire 1953 wall to inspect the foundation for deterioration or structural damage. After inspection of the foundation, we will make recommendations for repair of deterioration at the base of the wall and/or foundation.
- Repoint CMU as necessary
- Sealants and caulk to be removed where deteriorated and replaced
- There are areas of brick veneer separating from the CMU backup wall. These may require pinning to the CMU wall in addition to repointing.

Building Interior

- Structurally pin the CMU pilasters along the south bay to the wall. Check for proper beam bearing. The movement is believed to be a function of the voids created under the bay slab.
- Bay slab – there are several options available for the slab. Due to trip hazards, continued deterioration, unknown results or extreme cost we do NOT recommend item 1-4 as viable stand-alone solutions.
 1. Do nothing and let the problem continue. Trip hazards, cracks and deterioration will continue.
 2. Utilize a structural crack healer for major crack repair Then parge (apply cementitious material over the existing floor) the slab to even out cracks and settlement. This will only last a short time before cracks and continued settlement destroy the parged material.
 3. Core holes in the slab and inject lean concrete into voids. This could have unknown results, may not solve the problem and could potentially require vast amounts of materials.
 4. Saw cut the slab, remove it and all compromised base under the removed slab. Install new compacted base and a new properly reinforced slab sloped to drain. Install trench drains or catch basins in the new slab. Consider adding in-floor radiant heat to the slab.
 5. **Recommended solution for a long-term fix:** Add 2-3 new bays on the north side of the 1970 building. They should be properly sized for height and width, drainage, in-floor radiant heat, slab design, etc. These bays can be added while the existing bays are still in service. Move vehicles into the new bays when ready. Parge the existing floor as in Item 2 above and utilize a structural crack healer for major crack repair. Then repurpose the abandoned bays for firematic support spaces such as new M/F bathroom with shower, gear room, DeCon, SCBA, storage, etc. While the voids and decay under the slab will continue, the parging should last several years because the extreme truck loads and vibration will cease. Much of the new equipment needed such as gear lockers, fume exhaust, SCBA compressor are available through federal grants.

- Remove access from the bays to the restrooms. This should be done in conjunction with Item 5 recommendations above.
- New insulated doors with closers, double pane glazing, weatherstripping, thresholds and door sweeps at all openings between the clean spaces and dirty spaces.
- Separate with walls to ceiling the turnout gear storage room, from other spaces in the building.
- Add exhaust fan and 24/7 hospital-grade particle/gas/VOC filtration system to the turnout gear storage room, similar to Honeywell F111C1012W-3S 95% (0.3 micron) ceiling mounted unit.
- Upgrade bathrooms and fix or replace non-working fixtures.
- Upgrade kitchen. Install Ansul hood over stove in accordance with NYS building code requirements.
- Upgrade offices, storage as money is available. These are not critical functions to response.
- Consider adding hot-zone cleaning stations at each major entry/exit point of the bays.
 - Hand Sanitizers
 - Washable rubber shoe scrubber mats (must maintain)
 - Bench to change shoes and possible box of disposable shoe covers
- Separate room functions per NFPA 1581, FEMA, codes and standards
 - DeCon/Laundry
 - Storage
 - SCBA
- Scrape and repaint all failing paint surfaces using lead-safe practices.
- Test for and eliminate any asbestos or other hazardous materials.

Life Safety/Code/ADA Assessment

- Install exit signage, proper panic door hardware for egress doors, repair any trip hazards (such as differential settlement in bays, remove step at south egress door (see south elevation) and repair accessibility issues at egress doors such as grade differences, width, approach, etc. In addition, there are other ADA compliance issues (door approach, signage, encroachment, doors and hardware, etc.) that will need to be addressed as repair and renovation work is undertaken.
- Change out all other door hardware to meet ADA requirements.
- Move exterior ADA parking space as A/C unit protrudes into the space.
- Create accessible bathrooms.
- Install a building-wide fire alarm system.
- Install missing covers on electrical boxes and switches.
- Widen south hallway along kitchen to allow ADA access. Replace exit door to meet minimum ADA width requirements.
- Install a kitchen hood with grease rated ductwork and fan, fire suppression system, and make-up air capacity. The hood must be tied into the fire alarm system.

Structural and Foundations

- Foundations under the portions of the south, east and west walls need to be uncovered and assessed. See East and West elevation notes for more explanation.
- The pilasters in the bays need repair, see Building Interior.

Mechanical, Electrical & Plumbing

Mechanical

- The boiler is a 2006 model year. Regular maintenance should be in place.
- The age of the furnace is not known. Depending on what choices are made concerning bays, slabs, addition, etc. the furnace may become unnecessary.
- The District may want to upgrade the window style through-wall AC units, but there is no pressing need.

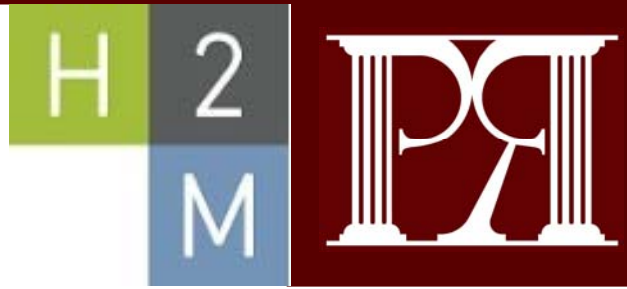
- A forced air heating system is wasteful and inefficient as a heating method for the bays. Replace with either in-floor or overhead radiant heat.

Electrical

- There are two (2) 200 amp services entering the building. If renovation is commenced, combine to a single 400amp service. The service entrance grounding system will need to be upgraded to comply with current National Electric Code requirements.
- Upgrade wiring and subpanels as work appropriate.
- Upgrade lighting as appropriate.
- Install GFI outlets in the kitchen.
- Cover all exposed electrical boxes.

Plumbing

- Upgrade men's and women's bathrooms to be ADA compliant
- Insulate hot water piping for plumbing and boiler.



Site Assessment











Legend:
G = Good
A = Average
P = Poor
X = Needs Replacement

Lot Size: _____

North Adjacent Property: **Private Home**

_____ Availability _____

East Adjacent Property: **Open Land Owned by District**

_____ Availability _____

South Adjacent Property: **Creek**

_____ Availability _____

West Adjacent Property: **Apron & Rt. 40**

_____ Availability _____

Road Frontage: **Good – Entire Parcel**

General Site Topography: **Gentle Slope E-W**

Accessibility: **Good**

Fencing: N

Apparatus Bay Front Aprons:

Concrete: N

Apparatus Bay Side Aprons:

Concrete N Bollards: N

Front Apron to Road

Asphalt: Y N Bollards: Y N

Conditions: A

G/C **Cracked & Sealed**

Side Apron to Road

Asphalt: Y N Bollards: Y N

Conditions: A

G/C **Cracked & Sealed**

Heavy Duty Pavement Areas: **None**

Light Duty Pavement Areas: **All**

Asphalt

Condition: A

G/C **Cracked & Sealed**

Sidewalks: **None**

Lawns & Landscaping:

G/C **Well Kept - Rear**

Firefighter Parking & Access: **Excellent**

of Parking Spaces **30** # HDCP **2**

Public Parking & Access: **Same as ABV**

Ingress/Egress FFE & EMS

Traffic Control: **Y**

Returning Apparatus:

Drive Thru **None**

Back in from within property **Yes**

Existing Utilities

Storm Drainage:

Municipal: **Y**

Does all storm go to municipal system: **N** If N, comment

G/C **Directly to creek**

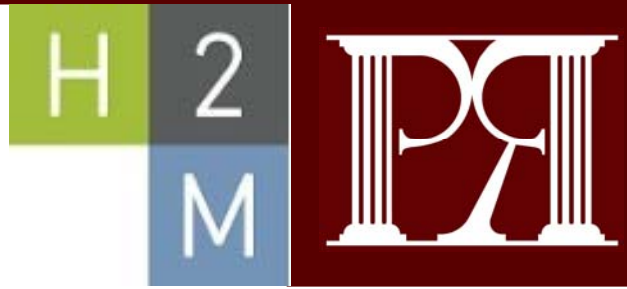
Roof Drainage: **Direct off back of roof**

Security

Site **N/A**

Existing site would accommodate a building footprint expansion of **New Bay to North**

Site Recommendations for Renovations/Expansions – Need to correct septic situation and remove single wall buried fuel tank.



Building Envelope



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Location: Melrose Fire District

Date: 9/21/16

By: DAR/DJP

Building Envelope



BUILDING ENVELOPE

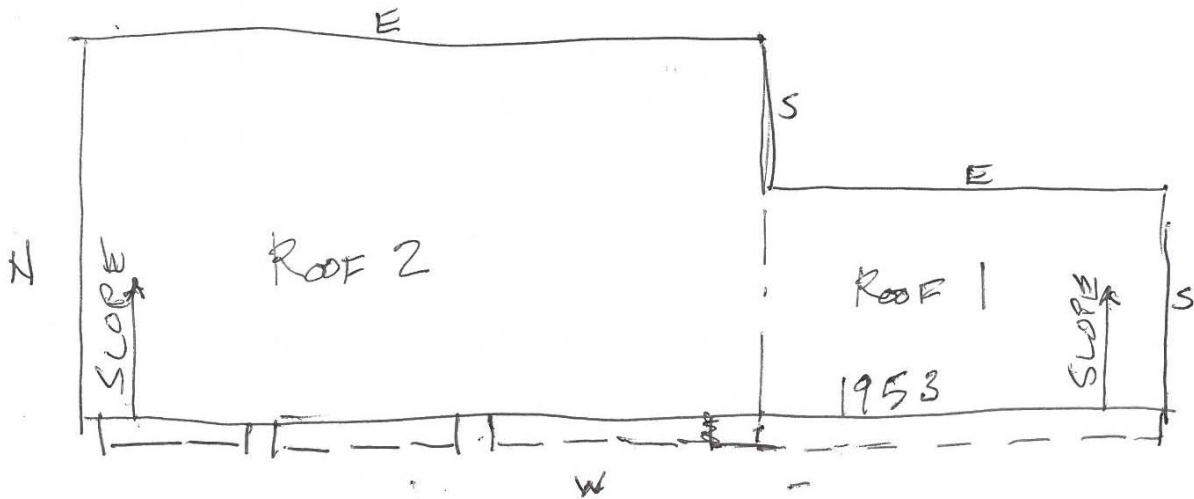


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| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

N.T.S.

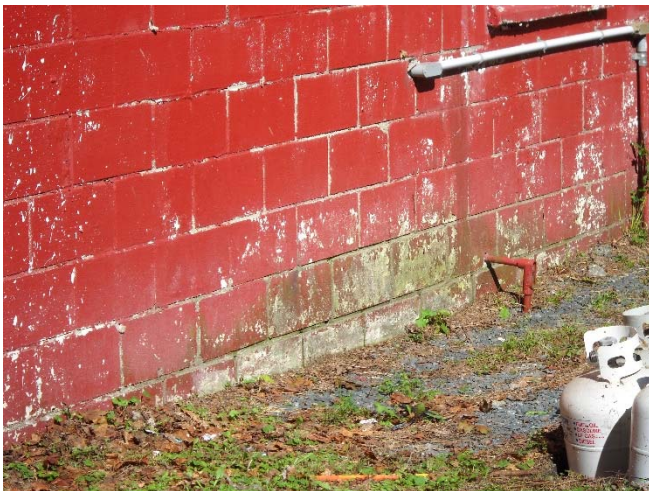


RT 40



BUILDING ENVELOPE LAYOUT SKETCH

| CONDITION LEGEND | |
|------------------|-----------------------|
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m



BUILDING ENVELOPE

| CONDITION LEGEND | |
|------------------|-----------------------|
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ROOFS

Roofs: # of Different Roofs **Two distinct roofs with multiple layers – 5 year old ribbed metal installed directly over Bitumen Roof.**

Roof #1 Location: **Low Roof at South – Original Building**

Low Sloped **with Mansard at Front Overhang**

Type: **Metal - Ribbed**
 General Condition: **G** **5 years old**

Drainage: **External**

Direct to: **Ground**

| CONDITION LEGEND | |
|------------------|-----------------------|
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Overflow Scuppers: **N**

Drainage System Condition **A**

G/C **Direct flow off of roof which runs down exposed fascia and wall, splashes onto wall – deterioration at wall and at wood sub-fascia.**

Roof Penetrations: **Y - Siren Tower**

Parapets/Flashing

G/C **Good**

G/C Roof #1 **Good – Consider large gutter with downspouts to direct flow away from wall. Repair/replace and paint or aluminize wood fascia.**

ROOF #1

Roof #2 Location: **High – Bays & Meeting Room**

Sloped with Mansard at Front Overhead doors

Type: **Metal - Ribbed** **5 years old**

General Condition: **G**

Drainage: **External**

Overflow Scuppers: **N**

Drainage System Condition: **A**

Roof Penetrations: **Y**

2 - Curbs **Conduits - 2**

Condition: **G**

Flashing

G/C **Good**

G/C Roof #2 **Good – Consider large gutter to direct flow away from wall.**

ROOF #2

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Exterior Skin:

North Elevation:



NORTH ELEVATION

Type: Composite at Roof Slope over CMU

Plain CMU Painted – Single Wythe

Sub-structure: Struc. Steel

General Condition Exterior Skin G

Any Signs of Water Penetration: N

| CONDITION LEGEND | |
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Control Joints – **One at 1/3 point of wall**
G/C **Good**

Proper Flashing & Sealants:

G/C **Good**

Fascia

G/C **Good – Part of Roof**

Windows:

Type: **Aluminum**

Style: **Slider**

Glazing: **Double (DBL)**

Weather tightness & Energy Efficiency:

Screens:

G/C **Good**

Louvers:

Personnel Doors: 2

Type: Aluminum & Glass **Hollow Metal (HM)**

Accessories: **Weather-stripping**

Thresholds

Closure

Sweeps

Weather Tightness & Energy Efficiency:

Doors Operate Properly:

East Door Frame Rusted at Bottom – Serious

Overhead Doors:

Type: **Insulated Panel**

NORTH ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
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Weather-stripping: **Y** Condition: **G**
 Weather Tightness & Energy Efficiency: **A**
 G/C **Good**

Insulation: **N**

Overall Weather Tightness & Energy Efficiency: **A P**

G/C North Elevation **Average – No wall insulation – Heat loss from Bays**

Exterior Skin:

East Elevation:



NORTH ELEVATION

EAST ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
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EAST ELEVATION



CONDITION LEGEND

G = Good

P = Poor

A = Average

X = Needs Replacement



EAST ELEVATION



| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
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EAST ELEVATION



| CONDITION LEGEND | |
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Type: **Plain CMU** – Single Wythe

Sub-structure: **None**

General Condition Exterior Skin: **P** - Some Painted, Some Plain

Any Signs of Water Penetration: **Y** If Y Comment

G/C **Very Poor – Needs Repointing – See Discussion of Lower Wall**

Control Joints – **One at Each Addition**

G/C **2 Southerly Joint Need to be Resealed.**

Proper Flashing & Sealants: **N**

G/C **Older Windows & Doors – Poor, Newest Addition is Good.**

Fascia **Soffits**

G/C **New Roof Fascia – Good**

All Soffits & Vents – X – Remove & Replace or Missing

Windows: **Y**

Type: **Aluminum**

Style: **Single Hung - 3** **Casement - 3**

Slider - 1

Glazing: **DBL**

Weather tightness & Energy Efficiency: **A**

Screens: **N**

G/C **Varies: Remove and Replace sealant and repair windows in 1953 original building – Repair middle window, North two windows are O.K.**

Vent: **Y**

Type: **Aluminum**

Fixed

EAST ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

General Condition: **A**

Personnel Doors: **Y** - 2 Single – 1 Double – Access to Storage Only

Type: **HM**

Accessories: **Weather-stripping** **Thresholds**

Closure – One Missing/One is Disconnected **Sweeps**

Weather Tightness & Energy Efficiency: **A**

Doors Operate Properly: **N** If N, Comment: **Middle Door Frame**

Separated from Wall – Double Doors deteriorated and severe leaks X -Remove & Block Up Opening –

Overhead Doors: **N**

Insulation: **P**

Overall Weather Tightness & Energy Efficiency: **P** **A**

G/C East Elevation **Poor to Average – Wall surface and finish deterioration, Severe soffit deterioration, Door deterioration, Water damage at wall including moss growth, Needs cleaning at base of wall, Repoint, seal and/or paint, Protect from roof drainage & site drainage from hill at rear. No Insulation – Serious heat loss, Chimney deteriorated and needs to be re-pointed.**

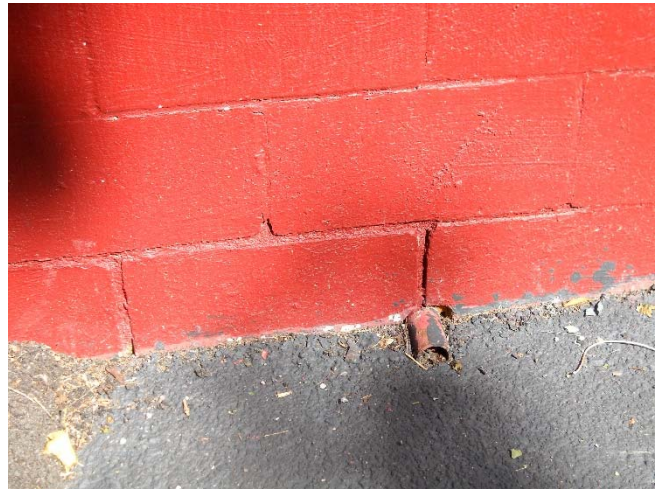
EAST ELEVATION

CONDITION LEGEND

G = Good P = Poor
A = Average X = Needs Replacement

Exterior Skin:

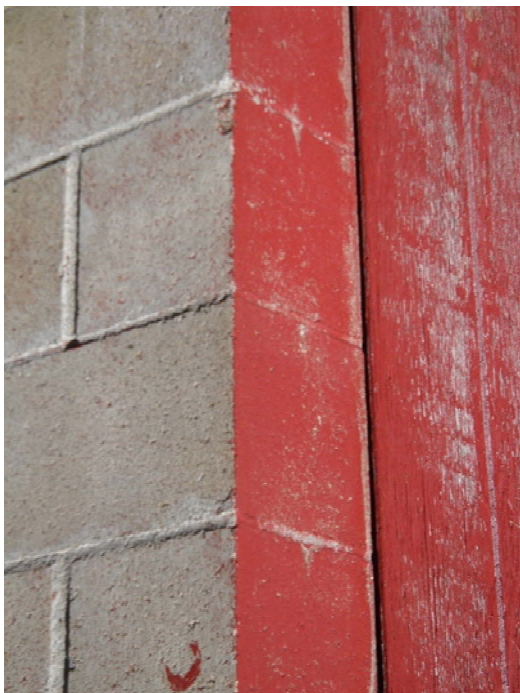
South Elevation: Composite Siding & Roof Fascia



SOUTH ELEVATION



| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |



SOUTH ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Type: **Plain CMU** **Single Wythe – No Insulation**

Other **Wood Panels on Studs with Batt Insulation & Particle Board**

Sub-structure: Brick CMU Struc. Metal Stud

Wood Other _____

General Condition Exterior Skin: **P**

Any Signs of Water Penetration: **Y** If Y Comment

G/C **Separation at Bottom of CMU Wall at West End – Wood Wall Sits on**

Open CMU Foundation

Control Joints – **Lack of**

G/C _____

Proper Flashing & Sealants: Y **N**

G/C **Deteriorated**

Fascia:

G/C **Part of New Roof**

Windows: **Y**

Type: **Aluminum**

Style: **Fixed - 1** **Single Hung - 1**

Glazing: **DBL**

Weather tightness & Energy Efficiency: **A**

Screens: **N**

General Condition: **G**

G/C _____

SOUTH ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Louvers: Y

Type: Steel - 1

Fixed

General Condition: A

G/C **Bent**

Personnel Doors: Y

Type: HM

Accessories: Weather-stripping

Closure

Weather Tightness & Energy Efficiency G

Doors Operate Properly: Y

Overhead Doors: N

Insulation: P

Overall Weather Tightness & Energy Efficiency: A

G/C South Elevation **Poor – CMU Needs Repointing & Fix at West Base**

SOUTH ELEVATION

CONDITION LEGEND

G = Good P = Poor
A = Average X = Needs Replacement

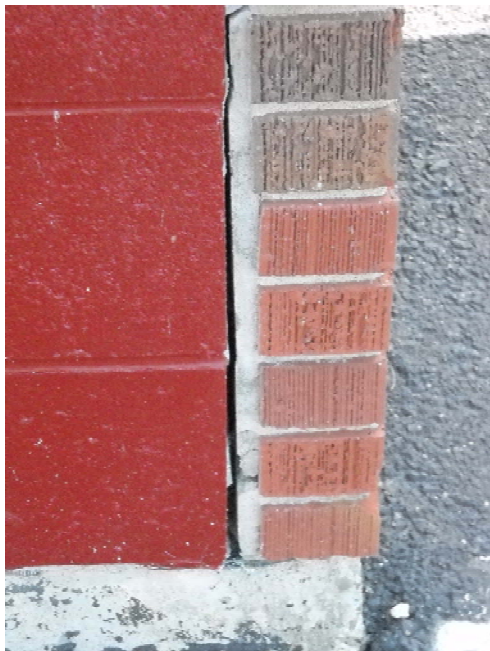
Exterior Skin:

West Elevation:



WEST ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |



WEST ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Type: **Brick** **Ribbed Metal Panel Mansards**

Other **Composite Siding**

Sub-structure: **CMU** - All

Wood - @ Meeting Room

General Condition Exterior Skin **A**

Any Signs of Water Penetration: **N** If Y Comment

G/C **Brick Needs Repointing Extreme CMU Deterioration at Base of Wall. Some**

Separation of Brick at North.

Control Joints

G/C **One - Needs Remove & Replace Sealant**

Proper **Flashing** **Y**

G/C _____

Fascia **Soffits**

G/C **Good – Part of New Roof**

Windows: **Y** N

Type: **Aluminum**

Style: **Single Hung - 4**

Slider - 1

Glazing: **DBL**

Weather tightness & Energy Efficiency: **G**

Screens: **N**

G/C _____

WEST ELEVATION

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Louvers: N

Personnel Doors: Y N

Type: HM

Accessories: Weather-stripping

Thresholds

Closure

Sweeps

Weather Tightness & Energy Efficiency A

Doors Operate Properly: Y

G/C Doors: X HM Frames rusted at bases

Overhead Doors: Y N

Type: Insulated Panel

Weather-stripping: Y Condition: G

Weather Tightness & Energy Efficiency A

G/C _____

Insulation: P

Overall Weather Tightness & Energy Efficiency: A

G/C West Elevation **Poor to Average. Deteriorating foundation is spalling concrete and needs immediate repair.**

Miscellaneous:

Insulation Levels and Energy Efficiency in Building Envelope:

G/C **Very Poor at all Walls - Windows –OK Has Ceiling /Roof Insulation Doors – OK**

Repair Recommendations in Envelope and Remedial Action to Prevent Continued Delay:

G/C **Recommend Repair at Wall Base, Soffits**

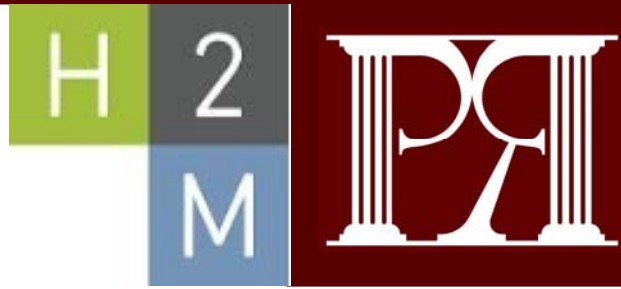
Maintenance Suggestions (Windows Relating to Energy Efficiency, Day Lighting, Operation & Necessary View Lines):

G/C **Clean & Inspect Sealant**



WEST ELEVATION

BUILDING ENVELOPE



Building Interior Evaluation



Location: Melrose Fire District

Date: 9/21/16

By: LLC

Building Interior Evaluation

Legend:
 G = Good
 A = Average
 P = Poor
 X = Needs Replacement

Apparatus Bay

of Truck Bays 4 – 2 and 2 Size of Doors 24w x 12h - South # that are Drive Thru 0

24w x 12h – North – 3” Thick

of Small Bays (Pick-up) 1 10w x 10h – 3” Thick # that are Drive Thru 0

Adequate side clearance N

Adequate overhead clearance N

Ceiling Construction:

Exposed Beam & Metal Covering A

Wall Construction: CMU P

Floor Construction: Concrete A - North Bay P - South Bay

Floor Drainage:

Trench Drains **North Bay 19’ – 6” long** **Centered in North Bay** A

South Bay Single CB P

Floors appear to pitch to drains: N – **South Bay** **Maybe – North Bay**

Overhead Doors: Brand: Raynor

Thickness: 3” Type: Insulated Steel Small Windows

Gen Condition: A

Operator Condition (Visual) : P

Controls: At Door **South, North, also @ Rear Responder**

Radio Room **Yes** Remotes **Yes**

Safety Edge: N

Manual Operation: Chain Hoist - South Bay

Manual Push-Up - North Bay

Accessories:

Drench/Eye Wash N

Air Reels Y Qty _____

Power Drops Y Qty _____

Hose Reels Y Qty _____

Truck Fill N

Ceiling Fans N

Hose Dryers N

Drinking Fountain Y Qty 1

Ice Maker N

Vehicle Exhaust:
None

Lighting (General Adequacy): A

Gear Storage: **33 Between Bays**

9 in South Bay – used also for misc. storage.

Hose Racks: N

Apparatus Bay Support

Radio Room:

View of Apron: -Limited View into bays:

Closed Circuit TV:

Proper Lighting: **Acceptable for what it is**

Adjacent Bunkroom:

General Adequacy:

G/C **No Individual Heat or A/C**

DeCon Room:

Drench/Eyewash:

Shower: (HDCP)

Sink:

Floor Drain:

DeCon Laundry:

Commercial washer/extractor:

Commercial Dryer:

Residential Washer:

Residential Dryer:

Sink:

Gear Dryers:

G/C Residential Washer & Residential Electric Dryer in South Apparatus Bay –

Dryer Has No Vent

EMS Storage:

Locked:

Two Size: 4'w x 6' 6''h x 2'deep metal cabinets in North Bay

Condition

Firematic Storage:

Couple of metal cabinets in South Bay

Condition

Red Bag Disposal Area:

Toilet Rooms (Accessible from Apparatus Bays): **Also the Men's Bathroom from Meeting Room**

Quantity: **1 Male** HDCP:

Shower:

2 Urinals/1 Toilet/1 Sink

General Condition:

General Traffic Flow in Apparatus Bay:

Two Responder Doors in North Wall of North Bay

Living/Office/General Areas

Basement **1st Floor**

Bunkrooms: **None**

Men's Bathrooms: #1 **Also Accessible From Bay**

Male

General Condition:

HDCP Accessible:

Lockers: N

Women's Bathrooms: #2 **3 Toilets - One of service, 1-Sink**

Female

General Condition: P

HDCP Accessible: N

Lockers: N

Day Lounge/Ready Room/Meeting Room/Banquet Room

Size: **43' x 28'-6"**

Flooring: VCT **12" x 12"**

Contents: Couches **4** Chairs **2** TV **1**

Conference Table **1**

General Condition: A P

G/C **Table/Chair Storage Including Vending Machines off Meeting Room**

Kitchen Area:

Kitchen size **20' x 15'-8"**

Kitchen: **Semi-Commercial**

Dishwasher: **Residential**

Refrigerator: **Residential Frigidaire Gallery**

Freezer: **Small Chest Freezer**

Stove: **Garland Double Oven/10 Burner/with Griddle that fits over 6 Burners**

Exhaust Hood: **None**

Ansul System: N

Flooring: Other **Seamless Linoleum**

General Condition: **P**

Training Room: **N**

Exercise Room: **N**

Office Area: **Y**

G/C **Small 2 Desk Office**

Conference Room: **N**

Elevator: **N/A**

Stairways & Corridors

G/C **Corridor Behind Kitchen to Narrow Exit Door**

Doors & Door Hardware

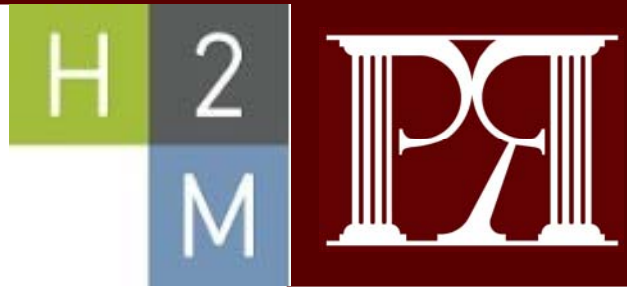
Electronic Hardware: **Y**

Fallout Shelter Currently in building: **N**

Does the building lend itself to creating fallout shelter space: **N**

Is the building currently used as a public polling place: **Y**

If so, are facilities adequate: Y N **Somewhat**



Life Safety/Code ADA Assessment



Date: 9/21/16

Location: Melrose Fire District

Life Safety/Code/ADA Assessment/

Site ADA

Walks: Reasonably Accessible Site

Ramps: None – Though Several Doors Should Have Them

Entries:

North: Y ____ N Reasons for Non-Compliance Door at East Accessible
Door at West End Not Accessible (step)

South: Y ____ N Reasons for Non-Compliance Egress Door Not Accessible

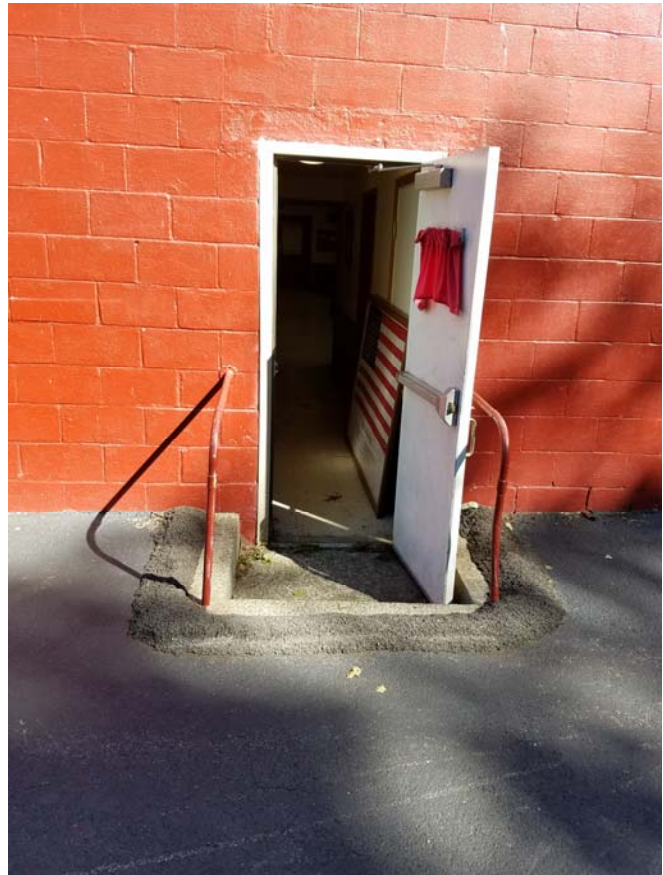
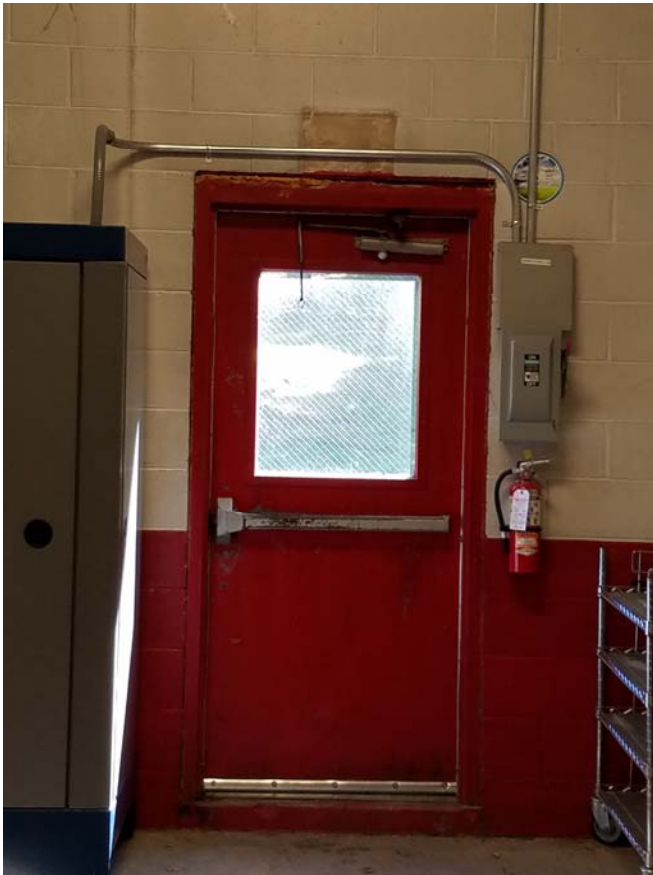
East: Y ____ N Reasons for Non-Compliance Egress Door Not Accessible

West Y ____ N Reasons for Non-Compliance Various Issues:



- Emergency Button 54” High
- Non ADA Door Hardware
- Air Conditioner Intrudes Into Accessible Parking Space
- Door Opening Force Too Great
- Grade Change at Threshold ≈ 3”

| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |



| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |



Parking:

Number of HDCP Spaces: 2

Signage: **Y**

Comments: **Accessible Route Issues related to steps, approach, encroachments, door hardware, door widths & non-compliant slopes**

Apparatus Bay

ADA: No Accessible Route – Egress Door Not Accessible, Step in Bay Slab in Walkway, Less than ADA Width for Accessible Route, Sink Faucets Not Accessible, Drinking Fountain Not Accessible, No Push Side Approach on Egress Door (Blocked by Air Station Compressor) Protrusion into ADA Space at Exit Door.

| CONDITION LEGEND | |
|------------------|-----------------------|
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Egress: **Too Much Force to Open Panic Device, Inadequate Egress Width, East Egress Door Trip Hazard, No Exit Sign or Closer at East Door from Turnout Area.**

Life Safety: **Raised slab trip hazards, drainage in response and egress paths, No exit sign at door, North Egress Door (East) from Bays Does Not Open In Winter With Frost Heave.**

FA168: Less than 3' Clear Around Trucks, Drains Not Under Trucks, Trip Hazards

NFPA Drinking Fountain Next To Decon Sink

NFPA: Decon Sink is Laundry Sink and Handwash Sink, etc.

NFPA: Turnout Area Not Separated

NFPA: No Separation of Work Areas

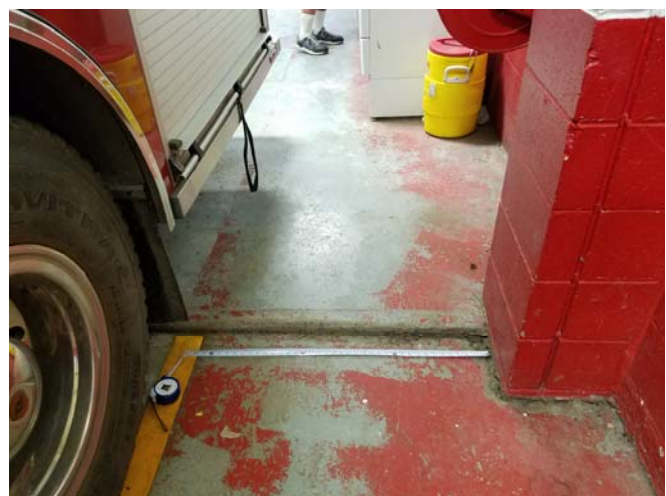
NFPA: Questionable Fume Exhaust

NFPA: No SCBA Wash Sink

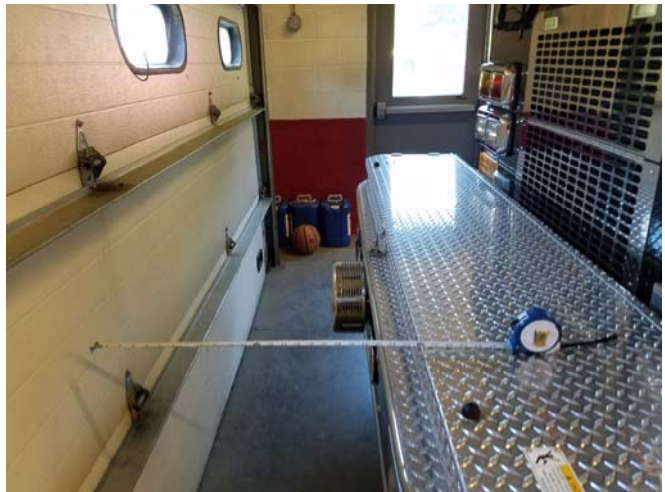
NEC: Exposed Electrical Wiring (Boxes without Covers)

NYS: Broken Closer at Egress Door

No Access to Mezzanine



| CONDITION LEGEND | |
|------------------|-----------------------|
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| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Other Spaces:

ADA:

Non Accessible Bathrooms

**Non Accessible Access/ Means of Egress
From Meeting Room**

**Non Accessible Approach on 1st Means of
Egress**

**Non Compliant Ramp Between Meeting
Room & Kitchen**

Non Compliant Door Knobs



| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Life Safety:

South Egress Door Too Narrow

No Fire Alarm System

No Sprinklers

No Fire Door Separation at Kitchen Pass Through (Not Required Now, But Not Compliant Under Old Code Under Which it was Built)

No Kitchen Hood/Ansul System

Storage Room Not Rated and > 100 SF

Missing Covers on Electrical Boxes



| CONDITION LEGEND | |
|------------------|-----------------------|
| G = Good | P = Poor |
| A = Average | X = Needs Replacement |

Egress:

South Egress Corridor From Meeting Room too Narrow:
41" Wide at Narrowest (Wainscot)
43" Wide Wall to Wall

South Egress Door No HDPC Approach and too Narrow: 28 1/2"

Door Has 10" Step Up at Exterior



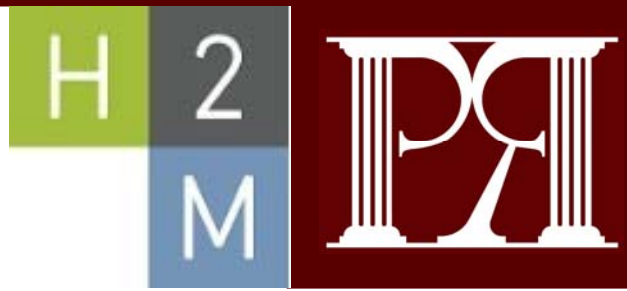
FA/168:

No Separated Facilities

NFPA:

No Separated Facilities





Structural Survey



PACHECO ROSS ARCHITECTS

A DIVISION OF H2M ARCHITECTS + ENGINEERS

DAVID J. PACHECO, AIA – CA, CT, DE, NJ, NY, NC, RI, VT, TN, TX

DENNIS A. ROSS, AIA – CO, CT, MD, MA, MI, MO, OH, PA, NH, NJ, NY, TN, VA, WV

Date: 9/21/16

Location: Melrose Fire District

By: _____

Structural Survey

MAIN STRUCTURAL SYSTEM (circle as appropriate)

| | | |
|---------------------|----------------------------|----------------------|
| General Steel Frame | Pre-Engineered Steel Frame | Masonry Load Bearing |
| Concrete Frame | Wood Frame | Other: _____ |

Corrosion? Y / N / NA _____ Warping? Y / N / NA _____

Buckling? Y / N / NA _____ Deterioration? Y / N / NA _____

Cracking? Y / N / NA _____ Drifting? Y / N / NA _____

General Condition/Clarifications: _____

Recommendations: _____

EXTERIOR WALL SYSTEM (circle as appropriate)

| | | |
|----------------------------|------------------------|---------------------------|
| Masonry Block/Brick Infill | Masonry Block w/Veneer | Metal Stud w/Metal Siding |
| Metal Stud w/Wood Siding | Metal Stud w/Veneer | Wood Stud w/Metal Siding |
| Wood Stud w/Wood Siding | Wood Stud w/Veneer | Other: _____ |

Settlement? Y / N / NA _____

Deterioration? Y / N / NA _____

Cracking? Y / N / NA _____

General Condition/Clarifications: _____

Recommendations: _____

EXTERIOR VENEERS (Circle One)

Brick Masonry Block Stone Other: _____

Lintels: Brick Concrete Steel Other: _____

Settlement? Y / N / NA _____

Deterioration? Y / N / NA _____

Cracking? Y / N / NA _____

General Condition/Clarifications: _____

Recommendations: _____

OTHER ITEMS:



Heating, Ventilation & Air Conditioning



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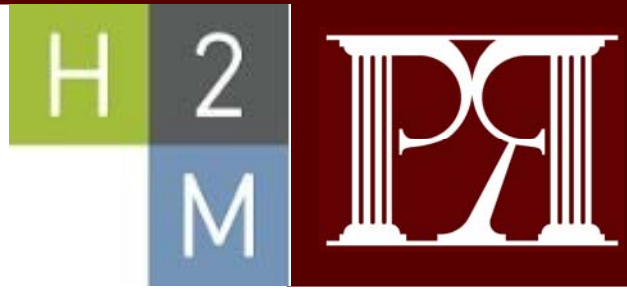
Date: 9/21/16

Location: Melrose Fire District

By: LLC

HEATING, VENTILATING & AIR CONDITIONING

- A. MFG & Model: Meeting Room – 1 Window Air Conditioner
18,000 BTU 230 Volt
Rear Office – Residential Window Style Thru Wall
- B. Heating Equipment – Supplement
- A. Type
- | | | |
|-------------------|-------------------------------------|---|
| Hot Water Boiler | <input checked="" type="checkbox"/> | Living Side – Hot Water Baseboard |
| Hot Air Furnace 5 | <input checked="" type="checkbox"/> | Apparatus Bays South Bay - Unknown North Bay - Carrier |
- B. Boiler MFG & Model Peerless Boiler Model #WBV-04-WPC4
Serial #558167-200609 Year 2006 From Boiler Inspection Form
Guard Dog Low Water Cut-Off
- C. Furnace MFG & Model I.B.R. Input 1.50 Gal/Hr 1.25 0.95
Net I.B.R. Rating 156,000 BTU/Hr 131,000 102,000
- E. Heating Equipment Terminal Units.
- A. Fin Tube Radiation Meeting Room
- B. Cabinet Heaters None
- C. Unit Heaters Trane Unit in Kitchen
- D. General Overall Condition & Control
Zone Pumps Two Talo Pumps



Electrical and Plumbing



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Date: 9/21/16

Location: Melrose Fire District

By: LLC

ELECTRICAL

1. Power

- A. Two Services Service Size 200 AMP/200 AMP – Disconnect Switch
- B. Main Breaker Size 200 AMP in Breaker Panel
- C. Voltage
120/240, 1
- D. Main Distribution Panel 20 Breaker Panel 1 – Kitchen SW Corner, Panel 3 - Hallway
- F. Convenience Outlets
GFI One in each Bathroom

2. Lighting

- A. Type Fluorescent
- B. Emergency Yes – Wall Battery Packs
- C. Exit Yes
- D. Exterior/Security Yes

3. UPS System



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Date: 9/21/16

Location: Melrose Fire District

By: LLC

PLUMBING CHECK LIST

1. Water Service

- A. Water Type City X
- B. Service Entrance Size 3/4 "
- C. RPZ (if installed) None
- D. Water Meter Size 3/4 "
- E. Approx. Location In kitchen under counter behind red curtain

2. Sanitary System

Septic

3. Number of Toilet Rooms

- A. Men's 1 ADA Compliant No
- Ladies 1 ADA Compliant No
- Unisex 0
- B. Fixtures
- Total No. of Fixtures
- Lavs 2 ADA N
- Urinals 2 ADA N
- Water Closets 4 ADA N
- C. Water Cooler(s) One in Bays
- ADA No

4. Water Service Piping

- A. Cold Water Piping Type 1/2" Insulated _____ Type Copper – Little Plastic
- Hot Water Piping Type 1/2" Insulated _____ Type Copper
- B. Isolation Valves Mains _____ @ Fixtures Yes

5. Domestic Water Heater(s)

- A. Quantity 1
- B. Type Electric X with exposed wiring
- C. Capacity 50 Gallon
- D. Mfg. & Model No. US Craftmasters
- E. Relief Valve Condition Ok – But not piped to floor

General Overall Condition and Evaluation Notes:

6. Kitchen Stove

LP Gas



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